



Small Spacecraft Technology Initiative Fact Sheet

NASA Headquarters selected the John C. Stennis Space Center (SSC) in South Mississippi to help develop two small demonstration satellites for the Small Spacecraft Technology Initiative (SSTI). Representing a new class of low-cost spacecraft containing state-of-the-art instruments, each satellite will transmit high-quality data to demonstrate the next generation of remote sensing technology. Remote sensing involves looking at objects, mostly the Earth's features, from a distance by using sensors that are either ground-based or mounted on aircraft and spacecraft.

Named after the explorers Lewis and Clark, these two satellites follow NASA's "faster, better, cheaper" philosophy by going from the initial proposal to the launch pad in 24 months or less. Because they are smaller and lighter than present satellites, they cost several million dollars less to launch, making it less costly to put newer technology into orbit. Both satellites are scheduled to launch in spring of 1997.

Personnel from the Commercial Remote Sensing Program (CRSP) Office at SSC are working closely with the two teams chosen to build, launch and operate both satellites TRW, Inc. of Redondo Beach, Calif., and CTA of Rockville, Md. For years, Stennis employees have been working with remote sensing data and instruments to find practical uses for the data and to bring this technology and its applications into the commercial sector.

Stennis Space Center will serve as the primary storage facility for data collected by the two satellites and will process the data for team partners. The CRSP office is also working closely with the teams in developing and testing commercial uses of satellite data in the marketplace, so when this modern technology becomes common practice, the marketplace will be ready to use it.

Many applications of remote sensing, such as assisting with disaster relief efforts, monitoring the environment and providing potential land sites for industry, require that data be received on Earth as quickly and clearly as possible. Since they are not operational satellites, but rather technology demonstration platforms, Lewis and Clark will show how the state-of-the-art remote sensing devices will provide data more efficiently and effectively.

In conjunction with this project, Stennis Space Center personnel have been coordinating education programs for local universities and high schools to spark interest in future engineers and scientists. The mission of the SSTI education initiative is to prepare students for careers that employ science and advanced technologies using NASA-sponsored tools through community-focused application projects.

The program introduces students and faculty to the concepts and tools of remote sensing and Geographic Information Systems. Students use remotely sensed imagery collected over their local community in combination with other data sources to address issues or problems native to their area. Mississippi students involved in the SSTI education program are from Jackson State University in Jackson, Pearl River Community College in Poplarville and W.P. Daniel High School in New Albany.

Though the Small Spacecraft Technology Initiative is presently funded for three years two years to build and one year in orbit the satellites have the capability to remain in orbit for five years or more. While in orbit, each satellite's remote sensing instruments are designed for separate missions, which should prove more cost-effective and efficient than previous methods.

The TRW-led satellite, "Lewis, will gather data valuable in Earth science activities and commercial business opportunities. Using an advanced hyperspectral imaging system, a device that measures light far beyond the boundaries of the human eye, Lewis will have the capabilities to assess and qualify information, such as determining the optimum time to harvest crops, measuring the effects of oil spills and providing information to be used in enforcing environmental regulations.

"Clark, led by the CTA team, carries a high-resolution optical element with stereo imaging capabilities and a separate instrument that maps global sources. Clark's capabilities will be helpful in areas such as finding optimum sights for airports and utility lines as well as pinpointing the sources of pollutants.

Both spacecraft will carry additional instruments that will provide global atmospheric pollution information for use by NASA's Mission to Planet Earth program. This program's mission is to monitor the Earth's atmospheric and geological conditions using a constellation of satellites.

For more information about NASA's Small Spacecraft Technology Initiative, contact the Stennis Space Center Commercial Remote Sensing Program Office at (601) 688-2042, or access the SSTI home page on the World Wide Web at "<http://crsphome.ssc.nasa.gov/SSTI/WELCOME.HTM> (no quotes).

NASA Stennis Space Center
Public Affairs Office
Stennis Space Center, MS 39529
(601) 688-3341
pao@ssc.nasa.gov

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